Patent Claims

1. A screw bolt (13) for fixing components, with a screw head (20), a screw-in thread (14), a stem (17) and an end surface (18) and with a depression (21) for the insertion of a tool (22a) which has an engagement height h, characterized in that a longitudinal channel (15) of length L1 emerging at the screw head (20) and in the end surface (18) is arranged in the screw bolt (13) and a pin (16) of length L2 which is moveable in the longitudinal direction is arranged in the longitudinal channel (15), L2 being larger than L1 by the amount ΔL, and ΔL corresponding to the engagement height h of the tool head (22a).

2. The screw bolt as claimed in claim 1, characterized in that the pin (16) is held captively in the screw bolt (13).

3. The screw bolt as claimed in claim 1 or 2, characterized in that the pin (16) has a stop in the region of the end surface (18).

4. The screw bolt as claimed in claim 3, characterized in that the stop is designed as a conical widening (16a) which bears against a bevel (15a) of the longitudinal channel (15) and ends flush with the end surface (18).

5. The screw bolt as claimed in one of claims 1 to 4, characterized in that the depression (21) has a polygonal profile for receiving a mating profile of the tool head (22a) with the engagement height h.

6. The screw bolt as claimed in claim 5, characterized in that the longitudinal channel (15) opens into the depression (21).

7. The screw bolt as claimed in one of claims 1 to 6, characterized in that it is designed as a plastic molded part (13).

8. The screw bolt as claimed in one of claims 1 to 7, characterized in that the pin (16) is produced from plastic.

9. The screw bolt as claimed in one of claims 1 to 8, characterized in that it rests with its end surface (18) on an elastomeric bearing (12b) and forms a stop.

10. The screw bolt as claimed in one of claims 1 to 9, characterized in that it has a reversing lock, in particular in the region of the stem (17).

11. The screw bolt as claimed in claim 10, characterized in that the reversing lock comprises a lip (12a) of the elastomeric bearing (12), which lip surrounds the stem (17), and outwardly protruding annular ribs (19) on the stem (17).

12. An arrangement for fixing a heat exchanger (1), particularly a cooling module in a motor vehicle, preferably at four, two upper and two lower, fixing points (4, 5, 6, 7), with interengaging fixing means being provided on the heat exchanger (1) and retaining means being provided on the motor vehicle (2, 3), characterized in that at least one fixing means, preferably the two upper fixing means, are designed as an elastomeric bearing (6a, 7a), and at least one retaining means, preferably the two upper retaining means,

are designed as a screw bolt (8, 9) with a displacement limit stop (8a, 9a), the screw bolt being supported in an essentially strain-free manner firstly on the motor vehicle (3) and secondly on the elastomeric bearing (6a, 7a).

13. The arrangement as claimed in claim 12, characterized in that the at least one screw bolt (8, 9) is screwed into a cross member (3) arranged above the heat exchanger (1) and is restricted in its screw-in depth by the displacement limit stop (8a, 9a).

14. The arrangement as claimed in claim 12 or 13, characterized in that the lower retaining means (4, 5) are arranged on a lower cross member (2), and in that the heat exchanger (1) or more precisely the cooling module is supported between the two cross members (2, 3) in a manner very substantially free from compressive stress.

15. The arrangement as claimed in claim 12, 13 or 14, characterized in that the at least one screw bolt (8, 9) is designed as claimed in at least one of claims 1 to 11.

16. A bearing for supporting a heat exchanger, particularly a cooling module in a motor vehicle, on a support (3), comprising fixing means on the heat exchanger and retaining means on the support (3), characterized in that the fixing means on the heat exchanger are designed as an upwardly open, pot-shaped recess (11) and as an elastomeric, cup-shaped bushing (12) which is received by the recess (11), and the retaining means on the support (3) are designed as a screw bolt (13) with a displacement limit stop (16), and in that the screw bolt (13) can firstly be screwed into the

16a emerges; the end 16a therefore protrudes with respect to the end surface 18. With this pin position, the screw head 13 is inserted and screwed into the screw-in opening of the lock carrier 3, to be precise until the end 16a touches the base 12b of the bushing 12. The pin 16 is displaced outward into the depression 12 by the same extent as the screw bolt 13 is screwed into the lock carrier 3, and pushes the head 22a outward up to an amount $\Delta L = h$, so that the head 22a is disengaged. The screwing-in operation is therefore ended before the elastomeric bushing 12 has become strained. On the contrary, the end surface 18 of the screw bolt 13 only has a contact with the elastic base 12b of the bushing 12 produced by touching. Since the bolt 13 is not under a compressive stress in the longitudinal direction, it could be turned back, but this is prevented by the retaining lip 12a in conjunction with the annular ribs 19. The screw bolt 13 is therefore captive after installation.

As already mentioned, the two bearings 6, 7 according to fig. 1 are designed in accordance with the bearing 10 with the screw bolts 13 according to the invention with a displacement limit stop, so that the cooler 1 is supported in a manner free from stress.

support (3) and can secondly be received by the bushing (12) in an essentially stress-free manner.

17. The bearing as claimed in claim 16, characterized in that the screw bolt (13) is received captively by the bushing (12).

18. The bearing as claimed in claim 16 or 17, characterized in that the screw bolt (13) is designed as claimed in at least one of claims 1 to 11.